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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,159	04/08/2004	Yasuo Takebe	43888-301	7042

53080 7590 03/21/2007
MCDERMOTT WILL & EMERY LLP
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EXAMINER

CHUO, TONY SHENG HSIANG

ART UNIT	PAPER NUMBER
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1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.		Applicant(s)	
	10/820,159		TAKEBE ET AL.	
	Examiner		Art Unit	
	Tony Chuo		1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 4-6, 9, 10 and 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7, 8, 11, 12 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Claims 1-14 are currently pending. Claims 4-6, 9, 10, and 13 are withdrawn from further consideration as being drawn to non-elected inventions. The objections to the specification are withdrawn. The amended claims do overcome the previously stated 102 and 103 rejections. However, upon further consideration, claims 1-3, 7, 8, 11, 12, and 14 are rejected under the following new 102 and 103 rejections. This action is made FINAL as necessitated by the amendment.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 11 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Rabellino et al (US 2003/0143129). It is noted that a preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and

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Kropa v. Robie, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). In claim 11, the intended use of the air purifying apparatus for a fuel cell is not given patentable weight.

The Rabellino reference discloses an air purification system comprising: an oxygen catalyst unit "200" that includes a catalyst having an oxidizing activity with respect to carbon monoxide; and an adsorption unit B "150(2)" that adsorbs and removes the pollutant, wherein the oxygen catalyst unit comprises heating means "210" and the adsorption unit B adsorbs and removes the pollutant after the pollutant has been oxidized (See paragraphs [0032],[0042] and Figures 7 and 11).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruck et al (DE 10065306.5), equivalent document (US 2004/0157095) relied upon for English translation, in view of Rabellino et al (US 2003/0143129).

The Bruck reference discloses a fuel cell module "10" comprising a fuel supply means for supplying hydrogen or hydrogen-rich gas to the anode; an air supply means; an air purification unit "40" that is provided in the air supply route of the air supply means, wherein the air purification unit "40" comprises a catalytic coating "42" that

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oxidizes the pollutant in the air and an adsorber "41" that adsorbs and removes the pollutant (See paragraph [0034],[0036]). It also discloses a catalytic coating "42" that includes a catalyst such as platinum that has an oxidizing activity with respect to carbon monoxide (See paragraph [0034],[0036]). Examiner's note: It is well known in the art that fuel cells are comprised of a cathode, an anode, and an electrolyte layer separating the anode from the cathode.

However, Bruck et al does not expressly teach an adsorber that adsorbs and removes the pollutant after the pollutant has been oxidized and a first pollutant removing means that includes a heating unit. The Rabellino reference discloses an adsorption unit B "150(2)" that adsorbs and removes the pollutant after the pollutant has been oxidized by an oxygen catalyst unit "200" that includes heating means "210" (See paragraph [0032],[0042] and Figures 7 and 11).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Bruck air purification unit to include an adsorber that adsorbs and removes the pollutant after the pollutant has been oxidized and an oxygen catalyst unit that includes a heating unit in order to further purify the air by removing carbon dioxide, thereby improving the efficiency of the fuel cell.

Examiner's note: The Rabellino reference is relevant to the Bruck reference and the applicant's field of endeavor because it solves the same problem of purifying air by removing pollutants.

6. Claim 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruck et al (DE 10065306.5), equivalent document (US 2004/0157095) relied upon for English

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translation, in view of Rabellino et al (US 2003/0143129) as applied to claim 1 above, and further in view of Kim et al (US 6080059). However, Bruck et al as modified by Rabellino et al does not expressly teach a porous material that is at least one selected from the group consisting of activated carbon, alumina, zeolite, and silica and carrying at least one selected from the group consisting of permanganates, alkali salts, alkaline hydroxides, and alkaline oxides. The Kim reference discloses activated carbon, activated alumina, or zeolite impregnated with potassium permanganate that is used to remove air pollutants (See column 6, lines 55-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Bruck/Rabellino air purification unit to include a porous material that is at least one selected from the group consisting of activated carbon, alumina, zeolite, and silica and carrying at least one selected from the group consisting of permanganates, alkali salts, alkaline hydroxides, and alkaline oxides in order to more efficiently remove air pollutant gases by adsorption. Examiner's note: The Kim reference is pertinent to Bruck reference, Rabellino reference, and the applicant's field of endeavor because it solves the same problem of purifying air by removing pollutants.

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rabellino et al (US 2003/0143129) in view of Kim (US 6080059). The Rabellino reference is applied to claim 11 for reasons stated above. However, Rabellino et al does not expressly teach a second pollutant removing means that adsorbs and removes the pollutant by means of a porous material carrying at least one selected from the group consisting of permanganates, alkali salts, alkaline hydroxides, and alkaline

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oxides. The Kim reference discloses activated carbon, activated alumina, or zeolite impregnated with potassium permanganate that is used to remove air pollutants (See column 6, lines 55-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Rabellino air purification system to include a porous material that is at least one selected from the group consisting of activated carbon, alumina, zeolite, and silica and carrying at least one selected from the group consisting of permanganates, alkali salts, alkaline hydroxides, and alkaline oxides in order to more efficiently remove air pollutant gases by adsorption.

Response to Arguments

8. Applicant's arguments with respect to claims 1-3, 7, 8, 11, 12, and 14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Chuo whose telephone number is (571) 272-0717. The examiner can normally be reached on M-F, 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC


JONATHAN CREPEAU
PRIMARY EXAMINER